

APPLICANT: Levee District No. 1 of Sutter County

PROJECT TITLE: Setback Levee at Star Bend
on the Lower Feather River Right Bank (RM 18.0)

TOTAL PROJECT COST: \$ 20.2 million

PROJECT DESCRIPTION:

The Setback Levee at Star Bend Project consists of constructing a new 3,400 foot long setback levee between the intersection of Star Bend Road and the Feather River right (west) levee and the extension of Tudor Road and the Feather River right (west) levee. According to the applicant, the existing levee configuration (jutting out into the Feather River channel), and the applicant's historical observance of underseepage issues at Star Bend make this section of the levee system the highest priority for levee reconfiguration and rehabilitation. The applicant states that the project hydraulics and hydrology report (see Section D of the application) shows that the proposed setback levee will reduce flow velocities along the right bank levee to less than 5 feet per second (fps) for the 1-in-200 year AEP event; depth of flow would be reduced by as much as 0.6 feet along the right (west) levee. The applicant claims that these findings are consistent with a separate hydraulic study prepared by Sutter County for a setback levee at Star Bend in June 2004.

Irrigation facilities owned and operated by the Tudor Mutual Water Company and Volcano Vista Farms at Star Bend will require modification to conform to the new levee configuration. These modifications will include the extension of outfall pipes from the existing Star Bend pumping plant through the new setback levee, construction of a positive closure device at the new levee, and rerouting of the existing network of irrigation pipelines currently located on the landside of the existing levee.

For this project, up to 45 acres of land on the riverside of the setback levee have been identified to be converted to riparian habitat restoration. According to the applicant, an additional 80 to 120 acres in the Abbott Lake Habitat Area could also be converted to riparian habitat restoration if the Abbot Lake Area is utilized as a borrow source for the setback levee at Star Bend.

The applicant states that land acquisition totaling 58.4 acres will be required for the project. The cost estimate for the proposed Setback Levee at Star Bend Project is \$20,150,762. The applicant is requesting a grant of "\$15 to 17 million" from the State under this program.

APPLICANT: Reclamation District 2103 (Yuba, Sutter, and Placer Counties)

PROJECT TITLE: Bear River North Levee Rehabilitation Project

TOTAL PROJECT COST: \$ 14.7 million

PROJECT DESCRIPTION:

Reclamation District No. 2103 maintains portions of the Bear River and Dry Creek Project levees. These levees provide flood protection from winter storm runoff for the City of Wheatland and surrounding agricultural land. RD 2103 is located primarily in Yuba County (4,290 acres), but also encompasses small acreages in Sutter (124 acres) and Placer (141 acres) Counties. A Problem Identification Report was completed by RD 2103 in 2006 which identified underseepage deficiencies with the Bear River levee. The PIR and subsequent foundation investigations and other studies of the levee have identified four deficiencies that should be addressed to comply with the Corps and State Reclamation Board standards. Three of these deficiencies will be addressed by the proposed project:

- (1) Underseepage: Construct soil-cement-bentonite cutoff walls (a total of 18,000 feet) to depths ranging from 30 to 70 feet (after degrading the levee). Most of the slurry wall (approximately 14,500 lineal feet) will be constructed along the Bear River right bank levee east of Highway 65.
- (2) Complete Existing Seepage/Stability Berm: Add a 100-foot section of seepage/stability berm between Highway 65 and access road embankment to expand the existing berm that was constructed from 1997 to 2000.
- (3) Perform Local Levee Repair: Address a potential leakage source near Sta.390+70; a 150 foot section of levee will be degraded to natural surrounding grade on the water side and reconstructed.

APPLICANT: Sacramento Area Flood Control Agency (SAFCA)

PROJECT TITLE: Natomas Levee Improvement Program (NLIP)
Early Start Program

TOTAL PROJECT COST: \$277 million

PROJECT DESCRIPTION:

The Natomas Levee Improvement Program (NLIP) Early Start Program will provide flood protection to the Natomas Basin in northern Sacramento and southern Sutter counties, including a portion of the City of Sacramento. The area to be protected is about 53,000 acres and is generally bounded by leveed reaches of the Sacramento River to the west, the Natomas Cross Canal (NCC) on the north, Pleasant Grove Creek Canal (PGCC) and Steelhead Creek (also known as the Natomas East Main Drainage Canal or NEMDC) on the east, and the American River to the south.

This proposed project is the Natomas Levee Improvement Program (NLIP) Early Start Program, consisting of the following components:

Sacramento River East Levee Improvement Project – Natomas Basin

Improvements to the existing 18-mile long levee will include levee raises (including widening where necessary to support safe lane widths on the Garden Highway, and reconstruction of the landslide levee slope and a combination of underseepage protection measures (cutoff walls, seepage berms, and relief wells); Supplement 2 – Reaches 1 – 4a (design and construction) and Reaches 4b – 20a (design only).

Sacramento River East Levee Bank Protection Project – Natomas Basin

The design includes the installation of rock riprap at the toe of the eroding slopes, continuing up to the typical summer water surface elevation, to protect against continued toe scour and shear stress at Sites 1 - 9.

Natomas Cross Canal (NCC) South Levee Phase 1 and Phase 2 Improvement Project

NCC is a 5.3-mile long channel that carries water from several tributary watersheds in western Placer County and eastern Sutter County to the Sacramento River. It consists of raising the levee as required to provide the design freeboard, reconstructing the levee, and correcting underseepage deficiencies. Phase 1 consists of up to 9,700 feet of the westernmost portion of the South Levee. Phase 2 consists of the remaining portion of the South Levee – about 19,000 feet; any remaining Phase 1 work not completed during the 2007 construction season would also be included in Phase 2.

Pleasant Grove Creek Canal Levee Improvement Project

The Pleasant Grove Creek Canal (PGCC) west levee extends southerly from the east end of the Natomas Cross Canal south levee along the Pleasant Grove Creek Canal. Improvements include: levee raise, levee widening, flattening the waterside of the levee, reconstructing the landside levee slope, and construction of a hybrid seepage berm.

APPLICANT: Three Rivers Levee Improvement Authority
(Yuba County and RD 784)

PROJECT TITLE: Feather River Levee Repair Project (FRLRP)

TOTAL PROJECT COST: \$201.3 million

PROJECT SUMMARY:

TRLIA completed analyses for three Alternatives and selected Alternative No. 2 (Levee Strengthening and Above Star Bend Setback Levee) as the preferred alternative.

The proposed project consists of levee improvements and replacement from the Bear River setback levee (FR PLM 13.3) to the WPRR crossing at about YR PLM 0.3. The project is divided into three segments, numbered from south to north:

- Segment 1: Below Star Bend, from the Bear River setback levee (FR PLM 13.3) to FR PLM 17.1 – “Fix-in place” embankment and foundation seepage mitigation consisting of cutoff walls, stability berms, relief wells, and monitoring wells.
- Segment 2: The levee is set back from Star Bend (FR PLM 17.1) to about one mile north of Murphy Road (FR PLM 23.6)/(Sta.580+00 to Sta.245+00) - Setback levee construction following the ASB (Above Star Bend) alignment and Pump Station No. 3 relocation. New setback levee replaces portion of levee that broke in 1997.
- Segment 3: From FR PLM 23.6 to the WPRR crossing at about YR PLM 0.3 – “Fix-in-place” embankment and foundation seepage mitigation consisting of cutoff walls, stability berms and monitoring wells, and levee freeboard mitigation.

Segment 2 (at 10% design level) is proposed for a setback levee while Segments 1 and 3 (at 60% design level) are proposed for fix-in-place structural improvements.

Total estimated Feather River Levee Repair Project Cost including setback levee (Segment 2) and strengthening levee (Segment 1 and 3) is \$201.3 million. TRLIA calculated their requested State cost share as 70% of the estimated “fix-in-place” for Segments 1, 2 and 3, plus 100% of the incremental setback cost for a total request of \$168.7 million.